ABSTRACT

The invention provides low temperature NO_2 trap compositions useful for adsorbing NO_2 from a gas stream at lower temperatures, and releasing the NO_2 at higher temperatures. The low temperature trap compositions are useful for incorporation into a diesel exhaust system equipped with a soot filter. The NO_2 from the diesel exhaust can be stored when the exhaust temperature is cool, e.g., during startup and at times of low load, and released when the exhaust is at higher temperatures. The released NO_2 serves as an effective oxidant for the combustion of soot deposited on the soot filter. These temperatures are significantly lower than those required for the combustion of soot using O_2 as an oxidant. The methods of the invention thereby provide a method for regenerating the soot filter within operating temperature ranges typical of diesel engine exhaust systems.